

Surface imaging of bio-samples using immunostaining–NanoSIMS

NanoSIMS 50L possesses the highest lateral resolution among SIMS, as well as high mass resolution at the same time. TRC achieved NanoSIMS imaging of proteins in bio-samples with a newly synthesized probe combined to antibody.

Feature of NanoSIMS 50L

[Equipment specs]

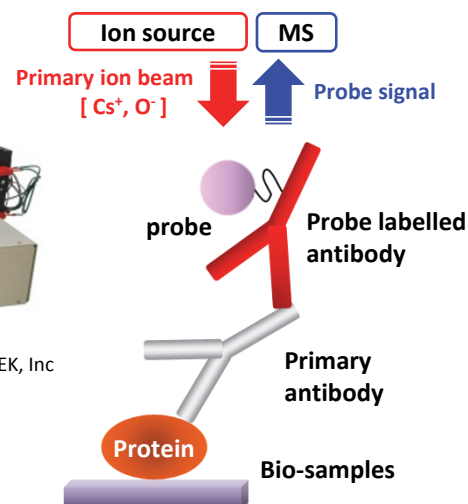
Primary ion beam	Cs ⁺ , O ⁻
Minimum beam diameter	O ⁻ : < 50 nm Cs ⁺ : < 50 nm
Limit of detection	ppb ~ ppm
MS spectrometer	Double focusing
Simultaneous detection number of Ions	7
Analysis depth	<several tens of nm

[Image of the instrument]



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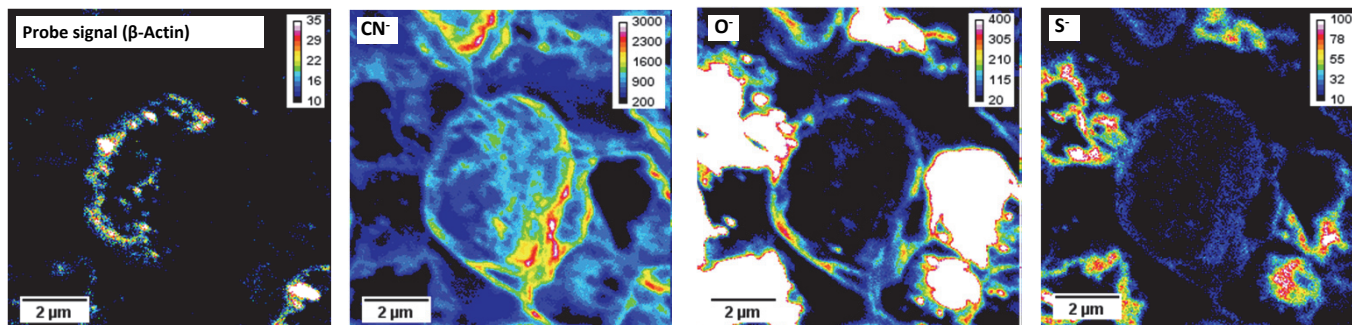
Immunostaining–NanoSIMS model



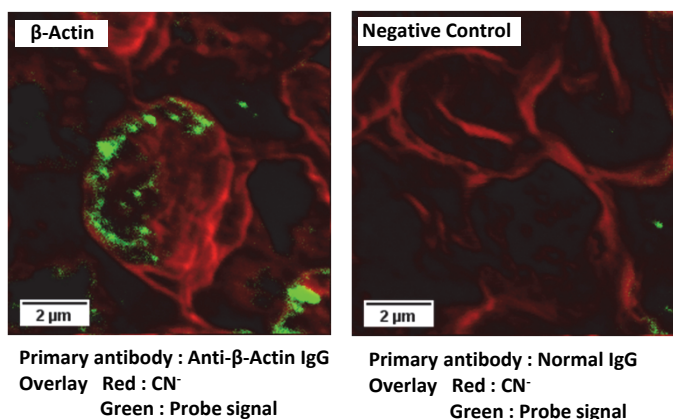
- ◆ High lateral resolution and sensitivity compare with the TOF-SIMS
- ◆ Achieve high lateral and mass resolution at the same analysis

Imaging of model protein (β -Actin) in mouse nerve fibers

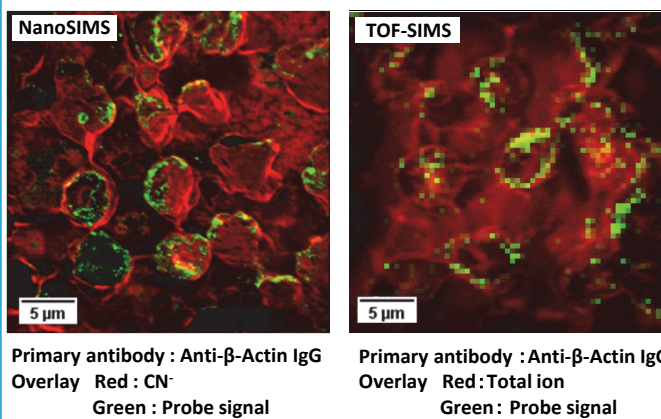
◇ Ion imaging Primary antibody : Anti- β -Actin IgG



◇ Comparison of negative control



◇ Comparison of TOF-SIMS



TRC provided Bio-imaging (ion/protein) with high lateral resolution (<50 nm)